Structures, Processes, and Responses of Plants

6-2 The student will demonstrate an understanding of structures, processes, and responses of plants that allow them to survive and reproduce. (Life Science)

6.2.9 Explain how disease-causing fungi can affect plants.
Taxonomy level: 2.7-B Understand Conceptual Knowledge

Previous/future knowledge: In 5th grade (5-2.4), students identified the roles of organisms as they interact and depend on one another through food chains and food webs in an ecosystem, including decomposers (microorganisms, termites, worms, and fungi). Students have not previously been introduced to the concept of diseases or their affects on other organisms.

It is essential for students to know that fungi are a kingdom of organisms that do not make their own food.

- Many types of fungi must grow in or on other organisms, such as plants.
- These fungi, for example grain mold, corn smut, and wheat rust, cause diseases in those plants that result in huge crop losses.
- Diseases caused by fungi may also affect other important crops, such as rice, cotton, rye, and soybeans.
- If a fungus infects a tree, fruit, or grass, it can eventually kill the plant.

NOTE TO TEACHER: Students should know that even though fungi can be harmful to plants, they are also helpful as decomposers, as a source of penicillin (medicine), and as food.

It is not essential for students to know about fungi that cause diseases in humans (including Athlete's foot) as this will be studied further in 7th grade.

Assessment Guidelines:
The objective of this indicator is to *explain* the effects of disease-causing fungi on plants; therefore, the primary focus of assessment should be to construct a cause-and-effect model of the ways that plants are affected by fungi. However, appropriate assessments should also require students to *recognize* fungi that cause disease in plants; or *recall* that not all fungi are harmful.